

Attorney Docket No. 2003B086

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AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listing of claims in this application.

Listing of Claims:

1-60. (Canceled)

61. (Original): A process for regenerating catalyst, wherein the process comprises the steps of:

- (a) receiving a coked catalyst in a regeneration zone from a reactor,
- (b) contacting the coked catalyst with a regeneration medium in the regeneration zone at a first superficial velocity and under conditions effective to convert at least a portion of the coked catalyst to regenerated catalyst and forming gaseous products;
- (c) directing the gaseous products and entrained catalyst from the regeneration zone to a separation zone, wherein the entrained catalyst flows in the separation zone at a second superficial velocity;
- (d) separating a majority of the gaseous products in the separation zone from a majority of the entrained catalyst in the separation zone;
- (e) returning the majority of the entrained catalyst to the regeneration zone; and
- (f) directing the regenerated catalyst from the regeneration zone to the reactor, wherein the ratio of the first superficial velocity to the second superficial velocity is at least 1.2.

62. (Original): The process of claim 61, wherein the ratio is at least 2.0.

63. (Original): The process of claim 62, wherein the ratio is at least 3.0.

64. (Original): The process of claim 63, wherein the ratio is at least 4.0.

65. (Original): The process of claim 64, wherein the ratio is at least 5.3.

66. (Original): The process of claim 65, wherein the ratio is at least 6.8.

67. (Original): The process of claim 66, wherein the ratio is at least 8.5.

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68. (Original): The process of claim 61, wherein the second superficial velocity is less than 1.0 meters per second.
69. (Original): The process of claim 68, wherein the second superficial velocity is less than 0.5 meters per second.
70. (Original): The process of claim 69, wherein the second superficial velocity is less than 0.25 meters per second.
71. (Original): The process of claim 70, wherein the second superficial velocity is less than 0.1 meters per second.
72. (Original): The process of claim 61, wherein the coked catalyst forms a dense bed in the regeneration zone, wherein the dense bed comprises from about 2 to about 45 volume percent of the regeneration zone, based on the total volume of the regeneration zone.
73. (Original): The process of claim 61, wherein the contacting of the coked catalyst with the regeneration medium in the regeneration zone occurs at a temperature of at least about 538°C.
74. (Original): The process of claim 73, wherein the temperature is at least 649°C
75. (Original): The process of claim 74, wherein the temperature is at least 704°C.
76. (Original): The process of claim 61, wherein the reactor is a methanol-to-olefin reactor.
77. (Original): The process of claim 76, wherein the process further comprises the step of:
- (g) contacting methanol in the reactor with a molecular sieve catalyst under conditions effective to convert at least a portion of the methanol to light olefins and to form the coked catalyst.
78. (Original): The process of claim 77, wherein the molecular sieve catalyst is a partially-coked molecular sieve catalyst.
79. (Original): The process of claim 77, wherein the molecular sieve catalyst is selected from the group consisting of SAPO-5, SAPO-8, SAPO-11, SAPO-16, SAPO-17, SAPO-18, SAPO-20, SAPO-31, SAPO-34, SAPO-35, SAPO-36, SAPO-37, SAPO-

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40, SAPO-41, SAPO-42, SAPO-44, SAPO-47, SAPO-56, the metal containing forms thereof, and mixtures thereof.

80. (Original): The process of claim 61, wherein the coked catalyst has a d_{50} particle size from about 20 to about 200 microns.
81. (Original): The process of claim 61, wherein step (d) occurs in a cyclone separator situated within the separation zone.
82. (Original): A process for regenerating catalyst, wherein the process comprises the steps of:
- (a) receiving a coked catalyst in a regeneration zone from a reactor;
 - (b) contacting the coked catalyst with a regeneration medium in the regeneration zone at a first superficial velocity and under conditions effective to convert at least a portion of the coked catalyst to regenerated catalyst and forming gaseous products;
 - (c) directing the gaseous products and entrained catalyst from the regeneration zone to a separation zone, wherein the entrained catalyst flows in the separation zone at a second superficial velocity, the second superficial velocity being less than the first superficial velocity;
 - (d) separating a majority of the gaseous products in the separation zone from a majority of the entrained catalyst in the separation zone;
 - (e) returning the majority of the entrained catalyst to the regeneration zone;
 - (f) releasing a flue gas stream comprising the majority of the gaseous products from the separation zone, wherein the flue gas stream contains less than about 0.5 weight percent entrained catalyst, based on the total weight of the flue gas stream; and
 - (g) directing the regenerated catalyst from the regeneration zone to the reactor.
83. (Original): The process of claim 82, wherein the flue gas stream contains less than 0.05 weight percent entrained catalyst, based on the total weight of the flue gas stream.
84. (Original): The process of claim 83, wherein the flue gas stream contains less than 0.005 weight percent entrained catalyst, based on the total weight of the flue gas stream.

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85. (Original): The process of claim 82, wherein the ratio of the first superficial velocity to the second superficial velocity is at least 1.2.
86. (Original): The process of claim 85, wherein the ratio of the first superficial velocity to the second superficial velocity is at least 2.0.
87. (Original): The process of claim 86, wherein the ratio of the first superficial velocity to the second superficial velocity is at least 3.0.
88. (Original): The process of claim 87, wherein the ratio of the first superficial velocity to the second superficial velocity is at least 4.0.
89. (Original): The process of claim 88, wherein the ratio of the first superficial velocity to the second superficial velocity is at least 5.3.
90. (Original): The process of claim 89, wherein the ratio of the first superficial velocity to the second superficial velocity is at least 6.8.
91. (Original): The process of claim 90, wherein the ratio of the first superficial velocity to the second superficial velocity is at least 8.5.
92. (Original): The process of claim 82, wherein the second superficial velocity is less than about 1.0 meters per second.
93. (Original): The process of claim 92, wherein the second superficial velocity is less than 0.5 meters per second
94. (Original): The process of claim 93, wherein the second superficial velocity is less than 0.25 meters per second.
95. (Original): The process of claim 94, wherein the second superficial velocity is less than 0.1 meters per second.
96. (Original): The process of claim 82, wherein the coked catalyst forms a dense bed in the regeneration zone, wherein the dense bed comprises from about 2 to about 45 volume percent of the regeneration zone, based on the total volume of the regeneration zone.
97. (Original): The process of claim 82, wherein the contacting of the coked catalyst with the regeneration medium in the regeneration zone occurs at a temperature of at least about 538°C.

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98. (Original): The process of claim 97, wherein the temperature is at least 649°C.
99. (Original): The process of claim 98, wherein the temperature is at least 704°C.
100. (Original): The process of claim 82, wherein the reactor is a methanol-to-olefin reactor.
101. (Original): The process of claim 100, wherein the process further comprises the step of:
- (h) contacting methanol in the reactor with a molecular sieve catalyst under conditions effective to convert at least a portion of the methanol to light olefins and to form the coked catalyst.
102. (Original): The process of claim 101, wherein the molecular sieve catalyst is a partially-coked molecular sieve catalyst.
103. (Original): The process of claim 101, wherein the molecular sieve catalyst is selected from the group consisting of SAPO-5, SAPO-8, SAPO-11, SAPO-16, SAPO-17, SAPO-18, SAPO-20, SAPO-31, SAPO-34, SAPO-35, SAPO-36, SAPO-37, SAPO-40, SAPO-41, SAPO-42, SAPO-44, SAPO-47, SAPO-56, the metal containing forms thereof, and mixtures thereof.
104. (Original): The process of claim 82, wherein the coked catalyst has a d_{50} particle size from about 20 to about 200 microns.
105. (Original): The process of claim 82, wherein step (d) occurs in a cyclone separator situated within the separation zone.

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